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| 09/814,034 | 03/21/2001 | Liang Chen | 25061A | 3539 |

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| EXAMINER |
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WILSON, DONALD R

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| ART UNIT | PAPER NUMBER |
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1713

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DATE MAILED: 09/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

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|-------------------------------|--|-----------------------------|--|
| Application No. 09/814,034 | | Applicant(s) CHEN ET AL. | |
| Examiner D. R. Wilson | | Art Unit 1713 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Restriction Requirement

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-11, drawn to a process of making a cross-linked binder composition, classified in class 524, subclass 556+.
 - II. Claims 12-16, drawn to a process of making a cross-linked binder composition including a further step of adding a hydrolyzed coupling agent, classified in class 525, subclass 342.
 - III. Claims 17-19, drawn to a composition, classified in class 525, subclass 330.1.
 - IV. Claim 20, drawn to a fiberglass insulation product, classified in class 428, subclass 441.
2. The inventions are distinct, each from the other because:
3. Inventions of Group III and IV are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a water absorbent and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.
4. Inventions of Group I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as making the binder composition by copolymerizing acrylic acid and an acrylate derivative of the polyhydroxy compound.

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5. The inventions of Group I are distinct from the inventions of Group II, because they include a process step of adding a reactive constituent not present in the process of the Group I inventions.
6. The inventions of both Groups I and II are distinct from the Group IV inventions because the process does not include the necessary steps to make the product of the Group IV inventions.
7. The inventions of Group II are distinct from the inventions of Groups III, because the inventions of Group II include a step to make a product beyond that of the Group III inventions.
8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and/or have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Election of Species Requirement

9. This application contains claims directed to the following genera of patentably distinct species of the claimed invention:
 - a. polyhydroxy cross-linking agents (Groups I, II, III and IV),
 - b. further cure accelerator constituents, including the specie of non-present (Groups I, II, III and IV),
 - c. hydrolyzed silane coupling agents (Group II), and
 - d. presence or absence of mineral oil (Group II),
10. As appropriate to the elected group of inventions applicant is required under 35 U.S.C. § 121 to elect a **single ultimate** disclosed specie for each of the above genera for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Where specific species are not identified in the claims applicant should elect a specific specie from the specification. An alternative method of election is to identify an Example which collectively exemplifies the elected species. Currently, Claims 1, 4-5, 8-12, 16-17 and 20 appear to be generic in their respective groups to the above species.
11. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any

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claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

12. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

13. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Conclusion to Restriction/Election Requirement

14. During a telephone conversation with Mr. Stephen W. Barnes on 8/23/02 a provisional election was made with traverse to prosecute the invention of Group III, Claims 17-19, and the species of (a) glycerine as the polyhydroxy cross-linking agent, and (b) sodium hypophosphite as the further cure accelerator constituent. The election of sodium hypophosphite as the further cure accelerator constituent is not responsive to the election requirement because sodium hyposulfite is not taught to be a further cure accelerator constituent. In a further telephone call to Mr. Barnes on 9/4/02, the Examiner agreed to drop this aspect of the election of species requirement, which makes the matter moot. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-16 and 20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

15. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

16. Applicant is also reminded that if claims directed to the product are elected, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined. See M.P.E.P. § 821.04.

Claim Rejections - 35 USC § 112, Second Paragraph

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

18. ***Claim 17-19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***

19. Claims 17-19 are indefinite because "low" is a relative term. Thus, the metes and bounds of what is included in low molecular weight cannot be determined.

20. Claims 18-19 are indefinite because it is unclear as to whether the further cure accelerator constituent is added during the preparation of the polyacrylic acid, or subsequent to the preparation. The claim language indicates the former, whereas the specification indicates the latter.

21. Claim 19 is further indefinite because sodium hypophosphite is a required ingredient, and Claim 18 requires a further cure accelerator. Thus, the composition of Claim 19 could not contain either just sodium hypophosphite or just sodium phosphite.

Claim Rejections - 35 USC § 102(b)/§ 103(a)

22. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(f) he did not himself invent the subject matter sought to be patented.

(g)(1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

25. **Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Arkens'213.**

26. Arkens'213 discloses compositions suitable for binders for fiber glass comprising a polyacid, a glycol, and a phosphorous-containing accelerator (col. 2, lines 55-62). The polyacids include polyacrylic acid and it would readily have been envisaged as it is specifically named as well as being the polyacid used in the examples (col. 4, lines 1-20 and examples). Molecular weights at the lower end of 300, 1000 and 10,000 are specifically disclosed which would have made such molecular weights also readily envisaged (col. 4, lines 21-31). A specific embodiment of the invention disclosed is the use of hypophorous acid and its salts as the chain transfer agent in making the polyacrylic acid, the purpose being to incorporate the phosphorous containing cure accelerator and the polyacid in the same molecule (col. 5, lines 11-18). U.S. Patent 5,077,361 is incorporated by reference which clearly teaches the use of sodium hypophosphite. Glycerol is specifically disclosed as an example of a suitable polyol (col. 6, lines 1-14), which along with its use as the polyol in Examples 1, 4 and 9 would have made it use as the polyol readily envisaged.

27. **Claims 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Arkens'213.**

28. Arkens'213 discussed above is deficient in not having specifically taught the use of a further cure accelerator. However, in as much as it is the composition being claimed, not the process of making, it is not seen that the compositions disclosed by Arkens'213 are different than those of the instant claims.

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When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon applicant to provide clear and convincing factual evidence that the respective products do in fact differ in kind - *In re Brown*, 59 CCPA 1063, 173 USPQ 685 (1972); *In re Fessman*, 180 USPQ 324 (CCPA 1974) - and to come forward with evidence establishing unobvious differences between the claimed product and the prior art product. *In re Marosi* 218 USPQ 290.

29. In the alternative, Arkens'213 discloses the use of a number of phosphorous containing accelerators which include alkali metal hypophosphite and alkali metal phosphite, as well as polymer bearing phosphorous-containing groups resulting from using sodium hypophosphite to prepare the acrylic acid polymer (col. 6, lines 29-51). It would have been obvious to one of ordinary skill in the art to combine two accelerators, both of which are known to be useful for the same purpose.

"It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) (citations omitted).

30. **Claims 17-19 are rejected under 35 U.S.C. 102(e,f or g) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chen'661.**

31. The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e)(f) and/or (g). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same

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person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

32. Chen'661 discloses binder compositions for fiber glass comprising a low molecular weight polyacrylic acid of 2000 MW, glycerine and sodium hypophosphite, and further discloses the cross-linking of said binders (see Example 1, Binder B). Although Chen'661 doesn't specifically teach making the polyacrylic acid in the presence of a sodium hypophosphite cross-linking agent, it isn't seen that the cross-linked product of the instant claims is distinguishable from that taught by Chen'661. The above citation to *In re Brown*, 59 CCPA 1063, 173 USPQ 685 (1972); *In re Fessman*, 180 USPQ 324 (CCPA 1974), and *In re Marosi* 218 USPQ 290, is also relevant here. It should be noted that as the claimed composition is cross-linked, the difference in sulfur content which would have resulted from the method of making the polyacrylic acid would no longer appear to differentiate the compositions.

Obviousness Double Patenting Rejection

33. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

34. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

35. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

36. **Claims 17-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-8 of U.S. Patent No. 6,274,661 (Chen'661).** Although the conflicting claims are not identical, they are not patentably distinct from each other because the cross-linked compositions of the instant claims are taught and or obvious for reasons discussed in the rejection over Chen'661 stated above.

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Art of Interest/Technological Background

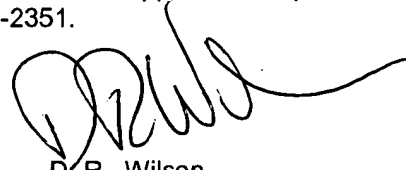
37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arkens'213 and '689 contain teachings considered to be cumulative to those relied upon in Arkens'213 and could also have been used to reject the instantly claimed compositions. Strauss'990 and Taylor'350 both describe glycerine cross-linked binder compositions based upon low molecular weight polyacrylic acid and could also be used as a basis for rejecting the instant claims.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. R. Wilson whose telephone number is 703-308-2398.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 703-308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications. The unofficial direct fax phone number to the Examiner's desk is 703-872-9029.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-2351.



D. R. Wilson
Primary Examiner
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